



Space News Roundup

Vol. 30

January 25, 1991

No. 4

Discovery readies for flight as preparations continue

By James Hartsfield

Preparations to launch *Discovery* on the first non-classified Department of Defense-dedicated shuttle flight perhaps as early as the end of February continue to go smoothly at Kennedy Space Center.

Discovery remains scheduled for a move to the Vehicle Assembly Building near the end of this month to be mated with its solid rocket boosters and external tank.

This week, primary and secondary seals in the Orbital Maneuvering System propellant crossfeed lines, fuel lines that allow propellant from the right OMS engine to be fed to the left OMS and vice versa, failed leak checks and were replaced. The replacement work, however, did not slow down other processing work on *Discovery*.

A reaction control system thruster, also, is being tested after technicians received indications of a possible leak. The problem is not expected to have a large impact on the work schedule.



Work plans to prepare shuttle missions for launch normally schedule at least three contingency days to serve as padding against a slip of the launch. However, various slow downs and minor problems during *Discovery's* processing already have used the extra days.

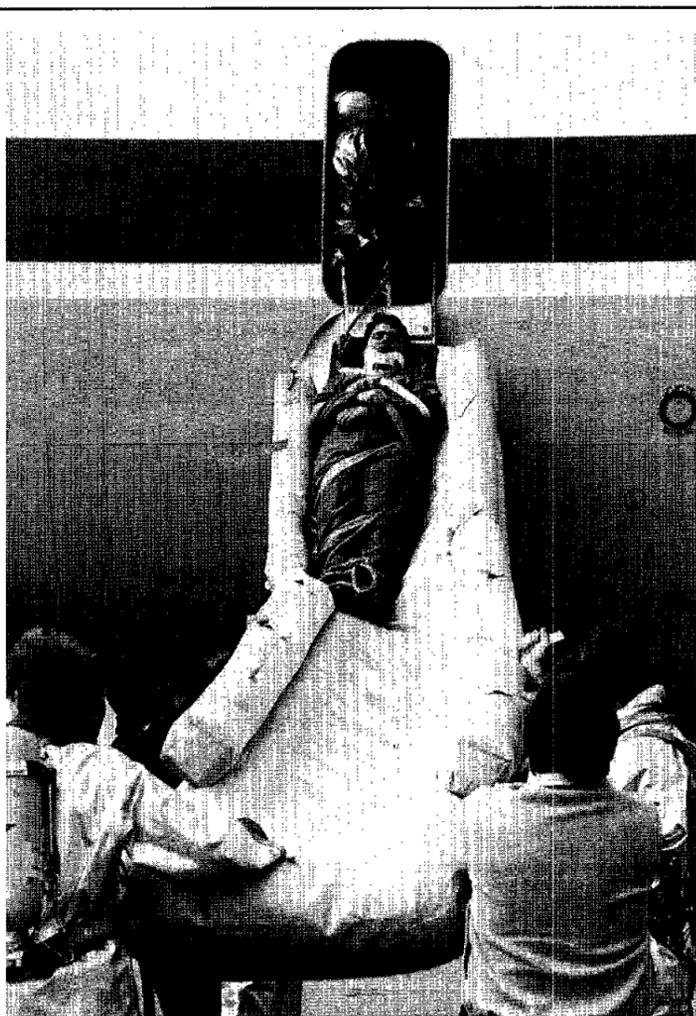
"Even though we've used up all

the padding in our schedule, a launch target date late in February is still holding, and if no further problems arise, we should make it," said *Discovery's* Vehicle Manager Dave O'Brien.

Although the schedule for an end of February launch is tight, it remains slightly ahead of the official early March launch period manifested for STS-39. Other work planned on *Discovery* this week includes closing the payload bay doors and filling the orbiter's tanks with drinking water.

The payloads for STS-39 — Air Force Payload-675; the Infrared Background Signature Survey and its accompanying Shuttle Pallet Satellite-II; and Space Test Project-1 — are in KSC's Vertical Processing Facility.

Please see **DISCOVERY**, Page 4



JSC Photo

KRUG employee Glenn Klute, one of the four individuals designated as "injured" for the mishap simulation, is safely lowered from the KC-135 during last Thursday's test. Klute was then transported via ambulance to the triage site established for the exercise for medical assessment.

Mishap drill exercises emergency preparedness

By Kari Fluegel

It was not a good day for NASA 930.

Upon returning from a routine flight, the Number 2 engine on the KC-135A caught fire, causing the aircraft to lose all hydraulics on the left side. The cockpit and cabin then filled with smoke.

The situation was complicated by poor weather conditions that left water standing on the runway.

As the aircraft landed all four tires blew out and NASA 930 slid from the runway into the mud.

The engine fire was extin-

guished soon after landing, but smoke remained in the cockpit and cabin. Inside were 21 passengers and five crewmembers. Four passengers were overcome by smoke inhalation and two additional people were left unconscious from head injuries sustained when the aircraft left the runway.

To complicate matters, the cargo door was jammed, but the flight crew was able to open the crew entry door as test directors opened the rear hatch and the emergency hatches over the wings

Please see **MISHAP**, Page 4

Crew steps up for 'grand slam'

By Pam Alloway

STS-39 crew members used the words "complex" and "challenging" frequently in describing the unclassified Department of Defense mission scheduled for a nighttime launch in late February or early March.

The eight-day mission promises to challenge its seven members as they embark on a series of difficult orbiter maneuvers while commanding a nearby spacecraft making atmospheric and shuttle plume observations.

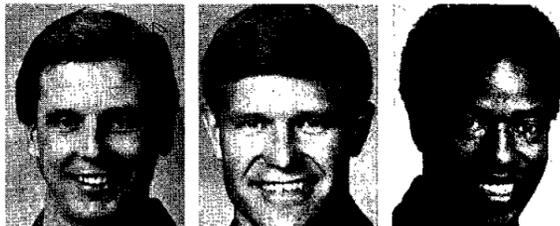
"Our mission is considered to be the grand slam of all space shuttle missions," said STS-39 Pilot Blaine Hammond. "We'll do just about everything on this mission that you could possibly hope for."

On flight day two, the crew will use the shuttle's Remote Manipulator System to deploy the Infrared Background Signature Survey on the Shuttle Pallet Satellite II from *Discovery's* payload bay. Crew members will retrieve the pallet on flight day four after the experiment has conducted planned atmospheric and shuttle plume observations. More than



Coats

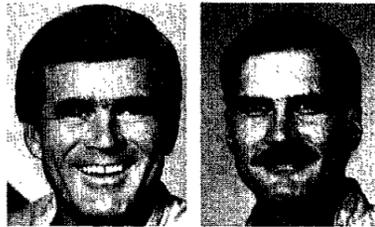
Hammond



Harbaugh

McMonagle

Bluford



Veach

Heib

60 orbiter maneuvers are planned to support the various phases of the SPAS/IBSS proximity operations and rendezvous.

STS-39 Commander Mike Coats pointed out some of the flight's unique characteristics during a press conference this week.

"This is the first unclassified DOD flight that NASA has flown on the space shuttle which is very important to us," Coats said. "It's nice to be able to tell you what we're doing up there. It's the first flight with seven astronauts from the Astronaut Office on the crew, no payload specialists."

"It's also the tallest crew, you may have noticed as we came in, ever to fly," Coats said. "We average over six feet in height

mostly because of Rick Hieb. When we all get up on the flight deck as we do during the real busy times in the flight, the term crew coordination takes on a whole new meaning."

Reporters asked crew members if they would make any special observations of the mideast in light of the war in that area.

"Nothing in the (Persian) Gulf is Please see **CREW**, Page 4

Six years of leave collected for workers in need

By Kelly Humphries

Pat Lafferty can explain first-hand about the purely human side of the Leave Transfer Program at JSC, but it takes numbers to reveal the amazing breadth of benefits the program brought employees in 1990.

Lafferty found himself facing three months of leave without pay when his wife, Charlotte, needed a kidney transplant at the Baylor University Medical Center in Dallas. The hospital recommends that patients stay in the area for three months following surgery in case complications develop.

But then he, like 56 other employees in 1990, was introduced to a program that allows the transfer of annual leave to qualified employees.

During the past year, employees donated 12,012 hours, or almost six years worth of annual leave to individuals who suffered medical emergencies or whose family members suffered medical emergencies.

Fifty-seven employees received

donated leave from 501 donors. Of those donors, 79 gave 100 or more hours and 79 gave leave to more than one employee.

"Because people are more aware of the existence of the program, we've had an increase in donations in the past year," said Natalie Saiz, the program coordinator for the Human Resources Office, "and it works because JSC employees care about their fellow employees."

The 1990 figures bring the total number of leave recipients since May 1988 to 76, the total number of donors to 822 and the total hours donated to 19,391.

In Lafferty's case, he quickly used the month of annual leave he had accumulated and was planning to take leave without pay to stay with his wife during her recovery, he said. But his division's administrative officer, Terry Fechner, urged him to apply for the Leave Transfer Program.

"She started the ball rolling, and in

excess of 300 hours were donated," said Lafferty, who helps develop life sciences experiments for shuttle missions in the Project Engineering Branch of the Life Sciences Project Division. "I was looking at about three months of leave without pay, but I didn't have any pay period when I didn't get some pay."

Although she's doing fine now, his wife did suffer complications following her surgery and was in the hospital for most of the three months.

"I was doubly glad I planned to stay there with her because she needed my help," Lafferty said. "It's a wonderful program as far as I'm concerned. I'm surprised, delighted and grateful that everyone chose to pitch in and help me in this fashion."

Another person who has been helped by the program is Linda McCoy, a program analyst in the Central Budget Office. Her illness has kept her away from the office for five months, exhausting all of her sick and

annual leave, and threatens to keep her away periodically. Her supervisor, Dave Westfall, recommended her to the program and completed the paperwork while she was ill.

"I'm not sure I could have managed without out it," she said. "A lot of terrific people at JSC have donated leave to me and I have really appreciated it. The generosity of the people at JSC has just been overwhelming to me."

Judy DeVine, who coordinates the leave transfers with the Payroll Office, said recipients range from new employees who have not built up any annual leave to veteran employees who have used a lot of leave to get to the point where they are eligible.

One of the things that has helped increase the use of the program is that the center's administrative officers have developed a system to help alert employees that their co-workers need assistance, DeVine said. Also, supervisors may fill out applications on behalf of prospective recipients. The

system reacts so quickly that one person received 682 hours of leave within 36 hours of reporting the medical situation.

Donors, she said, "range from secretaries to clerks to astronauts to managers."

Recipients must have a medical emergency involving themselves or an immediate family member, must be anticipating the need for at least 80 hours and must have used all of their annual and sick leave, she said. If a family member is ill, the employee is required to exhaust only annual leave. A JSC Form 1097 is required.

Donors must give at least four hours, but cannot donate more than half of the annual leave they would earn that year without waiving the limit. A JSC Form 1097A is required. Unused leave is sent back to donors, and in 1990, 700 hours were returned.

For more information about the Leave Transfer Program, call Saiz at x33035 or DeVine at x33001.

JSC

Ticket Window

The following discount tickets are available for purchase in the Bldg. 11 Exchange Gift Store from 10 a.m.-2 p.m. weekdays.

General Cinema (valid for one year): \$4 each.
 AMC Theater (valid until May 1991): \$3.50 each.

Thermographed, raised lettering and logo business cards can be ordered by civil service employees; 250 cards per set. Old logos-\$21; new logos-\$18.
 Stamp books (20 25-cent stamps): \$5.

JSC

Gilruth Center News

Sign up policy—All classes and athletic activities are first come, first served. Sign up in person at the Gilruth Center and show a badge or EAA membership card. Classes tend to fill up four weeks in advance. For more information, call x30304.

EAA badges—Dependents and spouses may apply for a photo I.D. 6:30-9 p.m. Monday-Friday.

Defensive driving—Course is offered from 8 a.m.-5 p.m., Jan. 26. or Feb. 16. Cost is \$15.

Aerobic dance—Eight-week session meets 5:15-6:15 p.m. Tuesday and Thursday nights. Cost is \$24.

Exercise class—Class meets 5:15-6:15 p.m. Monday and Wednesday nights. Cost is \$24.

Weight safety—Required course for employees wishing to use the Gilruth weight room. The next class will be from 8-9:30 p.m. Jan. 30. Cost is \$4.

Country and western dance—Beginning and intermediate class meets Monday nights for six weeks beginning March 4. Cost is \$20.

JSC fitness program—Health Related Fitness Program, 11 a.m.-noon and 4-5 p.m. Mondays, Wednesdays and Fridays April 8-June 28 at the Gilruth Center, free. Comprehensive medical examination required; for details call x30301.

JSC

Technical Library News

The following selections are now available in JSC's Technical Library, Bldg. 45, Rm. 100.

Phone Power: How to Make the Telephone Your Most Profitable Business Tool. George R. Walther. c1986 HE8735. W34 1986.

The Power of Ethical Management. Kenneth H. Blanchard, 1988. HF5387. B56 1988.

Achieving Excellence (sound recording), 1986. HJ2051. A59 1986.

An Introduction to Programming and Problem Solving with Pascal. Michael G. Schneider, 1982. QA76.73.P2 S36 1982.

JSC

Swap Shop

Swap Shop ads are accepted from current and retired NASA civil service employees and on-site contractor employees. Each ad must be submitted on a separate full-sized, revised JSC Form 1452. Deadline is 5 p.m. every Friday, two weeks before the desired date of publication. Send ads to Roundup Swap Shop, Code AP3, or deliver them to the deposit box outside Rm. 147 in Bldg. 2. No phone or fax ads accepted.

Property

Sale: Villa on the water w/boat access to Clear Lake, pool, club house, pier, \$43K. Mr. Collins, 480-8190 or 996-7693.

Rent: Webster, Pipers Meadow, 2-2-2, fen., FPL, \$675/mo. plus dep. x36665 or 333-9733.

Lease: Room in house, \$270/mo., incl. util. Eric, x38420 or 484-9179.

Sale: 3-2 mobile home, raised kitch., take over pmtys., \$231.98/mo. 337-3122.

Sale: Wtrfrnt. beach home on pilings, 3-2-3 on San Bernard River. 862-3929.

Sale: 4-2-5-2, Oak Brook, new carpet, backs up to Golf Course, \$98K. 488-1374.

Sale: Egret Bay Villa condo, wtrfrnt. view, 2-2-2CP, W/D, refrig., fan, mirr. wall. Melody, x33152 or 333-2625.

Lease: Sagemont, 1.5 story, 4-2-2, 2,200 sq. ft., gas heat, FPL, new paint/carpet, fans, fen., no pets, \$675/mo. plus dep. 484-4944 or 333-6806.

W/D/Lease: Egret Bay, 2-2-2, 2 patios/stor. closets, FPL, W/D, all appli., no pets, \$46K or \$500/mo. Betty, 486-9505.

Sale: Friendswood lot, 120x162, near schools, all util. avail., \$34K. Rick, 283-1988 or 996-8961.

Sale: Gulf front beach house, 2 BR on 2 lots, Crystal Beach, \$80K. (409) 684-2148.

Rent: Baywind 1 condo, 1 BR, \$390/mo. plus dep. Wait, x36353 or Doug, 480-9280.

Lease: Webs/Ellington, 2-1 apt., \$425/mo. Dave, x38156 or Eric, x38420.

Sale: Pearlant lot, Dixie Hollow, all util. x39530 or 482-5003.

Sale: Ellington/Sycamore Valley, 3-2-2, fence, lg. stor. shed, corner lot, recent paint/floors, \$62,500. Bill, x30164 or 481-6340.

Sale: Wtrfrnt. cabin, 2-2, near Hempstead/Brenham, CA/H, furn., dock, boat, \$49K. Dr. Francis, 436-1829.

Rent: Room, Friendswood, M/F, incl. util., W/D, microwave, hot tub, cable, \$225/mo. Rowena, x31675 or 482-4610.

Rent: Pasadena duplex, near JSC, 3-1-5, new carpet/paint/minibills, no pets, \$400/mo. FPL, screened patio. 554-6059.

Sale: Friendswood/Forest Bend, 3-2-2, new AC, fresh paint/wallpaper, FPL, workbench, \$62,400. 482-5175.

Rent: CL townhouse, 2-2-5-2, FPL, all appli., fresh paint, \$800/mo., non-smokers. 488-2664.

Rent: Galv. condo, 2-1, FPL, all appli., new carpet, 69th St., \$495/mo. 488-2664.

Sale/Trade: Cape Royal lot at Lake Livingston for equity in motorhome. 946-4210.

Sale: Bay Glen, 3-2-2, 2,050 sq. ft., formal DR, study w/French doors, \$122,500. 480-0527.

Rent: Galv. condo, Seawall Blvd., & 61st St., furn., sleeps 6, dly/wknd/wkly rates, cable. Magdi Yassa, x33479 or 486-0788.

Sale: Pipers Meadow, 3-2-5-2, formal LR/DR, FPL, loft, wet bar, fans, gar. door opener, deck, new paint, near JSC, \$92K. Dennis, x34405 or 480-5076.

Sale: Univ. Green townhouse, 3-2-2, fans, FPL, whirlpool, loft, alarm sys., decked cryd., near JSC, \$90K. Dennis, x34405 or 480-5076.

Sale: Kerrville, TX, 12x60 mobile home, furn., good cond., lg. CP, lg. cov. patio, \$6K. 333-6150 or 326-1254.

Sale: 60 acres on Hwy. 80, 3 mi. from Karnes City, 50 mi. from San Antonio; 2-story house on 1.5 lots in El Campo, fruit/pecan trees. 783-9164.

Cars & Trucks

'89 Camaro RS, 18K mi., V8, pwr., rear wndw. louvers, ex. cond., \$8,900. OBO. Scott, x39032 or 332-8845.

'70 Chevy PU, runs good, new clutch/tires, 100K mi., \$550. OBO. x35913 or 280-0065.

'78 Pontiac Bonneville, 2-dr., V8, auto., AC, PS, PB, cruise, 74K mi., \$2,200. 488-2318.

'77 Dodge Royal Monaco, pwr., AC, reliable, serv. rec., \$800. OBO. Gene, x38020 or 334-1505.

'88 Chev. ext. cab Silverado, V8, 49K mi., 72K warr., \$9,800. 480-8682.

'82 Ford Mustang, auto., \$2,500. x38265 or 482-1633.

'80 Toyota PU truck, SR5 longbed, 5-spd., camper, \$1K. Bob, x39030 or 480-7610.

'87 Toyota Celica, 3-dr. liftback, ex. cond., 48k mi., auto., \$8,200. 639-3455.

'73 Datsun 240Z, new tires, runs good, \$1,900. Gary Johnson, x34136 or 488-0353.

'88 Toyota Camry LE, pwr. sunroof/moonroof, loaded, 6 yr., 75K mi. ext. warr., ex. cond., 36K mi., \$10,700. OBO. Brian, 283-4126 or 996-9415.

'80 Toyota PU w/camper, AC, good cond., new clutch, \$1,500. 480-9724.

'82 Nissan Sentra, 4-dr. wagon, auto., needs work on eng., over 100K mi., \$1,200. OBO. Shirley, x34179 or 482-0899.

'85 Buick Regal, good tires, \$2K. x32987.

'86 Honda Prelude, 5-spd., sunroof, new tires/brakes, \$6K. x31237 or 488-8614.

'83 Porsche 911 Targa, 45K mi., 2 bras, cov., alarm, warr., \$21,500. David, 554-2992 or 929-7120.

'82 Chevy S-10 PU, V6, auto., Tahoe pkg., ex. tires, reb. trans., cov., 112K, \$2,500. OBO. x30021 or 479-7947.

'80 Pontiac Phoenix, V6, AC, 5-dr. liftback, new auto. trans. w/1 yr. warr., new batt., runs good, low mi., \$2,350. x30092 or 481-3637.

'79 Toyota 4 WD truck, good mech. cond., \$3,900. Bob, x34409 or 393-1670.

'68 Chevelle, 6 cyl., 100K mi., needs paint/int. \$1K. OBO. Ed, 283-5716 or 333-1563.

'83 Buick LeSabre, 2-dr., loaded, limited ed., ex. cond., \$2,500. Scott, x39156 or 482-8017.

'84 Ford PU, V8, camper, 71K mi., very good cond., \$4,950. x37883 or 337-5482.

'86 Buick Regal Ltd., V8, 2-dr., pwr., loaded, ex. cond., 70K mi., \$5,800. OBO. 282-4041 or 337-2318.

'54 Chevy, new trans., free trans. for parts, \$1,400; '62 Thunderbird, partially res., new eng., good cond., \$9,500. 283-5426 or (409) 925-6634.

'80 Toyota Celica, auto., good cond., 85K mi., new batt./carb./stickers, \$3,300. 486-4265.

'87 Plymouth Horizon, 4-dr., 5-spd., 97K mi., good cond., \$3,175. x32995 or 484-6033.

'88 Cullass Supreme International, 2-dr. spt. coupe, 2.8 multiport fuel inj., pwr., 37K mi., \$8,800. OBO. Kirk, 282-2911 or 332-5758.

'87 Chevy S-10 Blazer, ex. cond., 4-spd., 4-cyl., \$5,500. 470-0777.

'90 Jeep Wrangler, 7K mi., 4-cyl., \$10,200. Julie, x35724 or 482-3134.

'85 Monte Carlo, 4.3L fuel inj., V6, ex. cond. Dennis, x39012 or 554-4233.

'83 Plymouth Turismo, 2-dr. htchbk., ex. cond., 62K mi., 5-spd., \$2,100. OBO. Dennis, x34405 or 480-5076.

Cycles

'82 Honda 750 Nighthawk, 18K mi., pro-pipe header, new tires/batt., ex. cond., \$1,600. OBO. 282-3928 or 328-5129.

Street Stomper mountain bike, \$150. Jamie, x35459 or 332-6526.

'75 Honda 550cc motorcycle, runs good, new batt., back rest, roll bar, \$425. x30686 or 480-3260.

Boats & Planes

13' fiberglass sailboat, main, jib, galv. trlr., \$600. Bob, 482-9576.

'89 Bass Tracker, fish finder, ski rigging, 150hp, AM/FM ster., BO. Scott, x39032 or 332-8845.

21.9 Nova Wellcraft, outriggers, ship-to-shore radio, motor needs work, trlr., \$3,600. 944-2138.

19' Crestline IB/OB boat, 165hp, trlr., ex. cond. 862-3929.

'79 Renegade 1540, 140hp Evinrude, SST prop, trlr., ex. cond., \$2,500. OBO. 333-6868 or 486-7846.

'86 25' McGregor sailboat, 3 sails incl. 150 Genoa VHF marine radio, AM/FM cass. ster., depth finder, enclosed head, 6hp mariner, trlr., \$7,500. 532-2181.

'86 28' Wellcraft boat, cen. console, twin 115 Merc's, loaded, ex. cond. Gary, 554-6677.

25hp Evinrude, elec. start, new, \$1,700. Jerry Craig, 283-5311 or 420-2936.

'83 18' Renken sailboat, roller furling jib, 4hp aux., galv. trlr., sleeps 4, good cond., \$4K. 339-3476.

Audiovisual & Computers

Apple II plus, 2 disk drives, mono monitor, CPM card, SW, \$500. 482-7835.

Mac SE w/20M HD, 4MB RAM, ext. 800K floppy drive, ext. kybd., 1200 baud ext. modem & cables, case, SW, \$1,700. x31571 or 721-5459.

Pair Klipsch Cornwall spkrs., raw birch fin., \$700. Sota

JSC

Dates & Data

Today

Cafeteria menu—Special: tuna and salmon croquette. Entrees: pork chop with yam rosette, Creole baked cod. Soup: seafood gumbo. Vegetables: Brussels sprouts, green beans, buttered corn, whipped potatoes.

Monday

Call for papers—The International Astronautical Federation Congress is calling for papers by 5 p.m. Jan. 28 in JSC Associate Director Dan Nebrig's office. The theme of the Congress, to be held Oct. 7-11 in Montreal, is "The Next Century—Prospects for Space." In order to meet the deadline, JSC employees who wish to submit papers must supply abstracts of approximately 500 to 1000 words each. For more information contact Nebrig at x32465.

Cafeteria menu—Special: breaded cutlet. Entrees: beef chop suey, Polish sausage with potato salad. Soup: French onion. Vegetables: okra and tomatoes, green peas.

Tuesday

Cafeteria menu—Special: fried chicken. Entrees: Salisbury steak, shrimp Creole. Soup: split pea. Vegetables: mixed vegetables, beets, whipped potatoes.

Wednesday

NCMA classes—The National Contract Management Association and University of Houston-Clear

Lake are sponsoring a course in negotiation of contracts. The classes will begin 8 a.m. Jan. 30-31 at the University of Houston-Clear Lake in the Bayou Bldg. Cost: \$100 per person. For further information contact Jean Stell at 283-3122 or 283-3120.

Cafeteria menu—Special: stuffed bell pepper. Entrees: fried catfish with hush puppies, braised beef rib, barbecue plate, wieners and beans, shrimp salad. Soup: seafood gumbo. Vegetables: corn O'Brian, rice, Italian green beans.

Thursday

Radio club meets—The JSC Amateur Radio Club will meet at noon Jan. 31 in Bldg 16, Rm. 253. FCC Field Engineer Steve Lee will speak. For more information contact Dale Martin at x37740.

Cafeteria menu—Special: barbecue smoked link. Entrees: beef stroganoff, turkey and dressing. Soup: chicken noodle. Vegetables: Lima beans, buttered squash, Spanish rice.

Jan. 25

Cafeteria menu—Special: meat sauce and spaghetti. Entrees: baked scrod, liver and onions, fried shrimp. Soup: seafood gumbo. Vegetables: green beans, buttered broccoli, whipped potatoes.

Feb. 2

AAS conference—The American Astronautical Society will host the Rocky Mountain annual Guidance and Control Conference Feb. 2-6 at

the Keystone Lodge in Keystone Village, Colo. For information, call Alice Little at (303) 939-5147.

Feb. 12

Picnic meeting—The 1991 JSC Picnic Committee meeting will be at 5 p.m. Feb. 12 at the Nassau Bay Hilton (2nd floor lounge). For more information contact Melody at x33152.

Feb. 19

BAPCO meeting—The next Bay Area PC Organization will be at 7:30 p.m. Feb. 19 at the League City Bank & Trust. For more information contact Earl Rubenstein, x34807 or Tom Kelly, 996-5019.

Feb. 27

Laptop showcase—The Information Systems Directorate is sponsoring a notebook laptop showcase from 10 a.m.-4 p.m. Feb. 27 in Bldg. 12, Rms. 112, 254, and 256. For more information call the Product Demonstration Facility, x37572.

Feb. 28

NST banquet—The National Space Trophy will be formally presented to JSC Director Aaron Cohen at the Rotary National Award for Space Achievement Foundation's annual banquet at 8 p.m. Feb. 28 at the Houston Hyatt Regency-Downtown. Broadcast journalist Jim Hartz will be master of ceremonies. For more information contact John Francis or Dana Heard at 333-5986.

Sapphire turntable w/Magnepan arm, Grado cart., \$900. x39436 or 326-4066.

PFS Professional Write, Version 2.0, \$35. OBO. 486-5500.

286-12 MHz, 1 MEG mem., 40MB HD, 1.2M and 1.44M drives, 800x600 hi-res color monitor, Dot Matrix printer, SW, ex. cond., \$1,500. Vinh, x31685 or 541-2524.

Sony 5-disc changer CD player w/all features, ex. cond., \$150. OBO, x37990.

IBM XT computer, 640K mem., 30MB HD, 2 floppies, color hi-res monitor, \$975; Intel 386 inboard for IBM or Compaq, 1 MEG mem., Intel warr., \$375. x30092 or 481-3637.

'85 Buick Regal, good tires, \$2K. x32987.

'86 Honda Prelude, 5-spd., sunroof, new tires/brakes, \$6K. x31237 or 488-8614.

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'85 Monte Carlo, 4.3L fuel inj., V6, ex. cond. Dennis, x39012 or 554-4233.

'83 Plymouth Turismo, 2-dr. htchbk., ex. cond., 62K mi., 5-spd., \$2,100. OBO. Dennis, x34405 or 480-5076.

2 bar stools, wooden arms, brn. velvet seats/back, ex. cond., \$85/pr. x38033.

King, sz. ultramir motionless wtrbld., oak w/under bed unit, 6 drwrs., padded rails, htr., sheets, pad, filler kit, ex. cond., \$250. OBO. 480-0150.

3-pc. mauve/gray sect. sofa, \$375; cherry wood coffee table, 2 end tables, \$150; solid wood hdbd. dresser, mirr., chest, \$150; 25 gal. aquarium w/pump, \$25. Portia, x33044.

DR set, wood, \$25; Danish Modern queen sz. bed w/all end tables, dresser, matt/springs, \$300; video cab., \$50. Mary Ann, x33276.

STS-35 Mission accomplished

During their nine days in orbit, the STS-35 crew harvested a wealth of information on galaxies, stars, planets and black holes that will keep researchers happy and busy for years to come.

The long-awaited mission was launched under the light of a full moon Dec. 2 and landed safely at Edwards Air Force Base Dec. 10.

Scenes from the *Columbia* mission include: Upper right: The Astro Telescope package performed well despite some problems with the Instrument Pointing System, gathering 394 readings of 135 celestial objects.

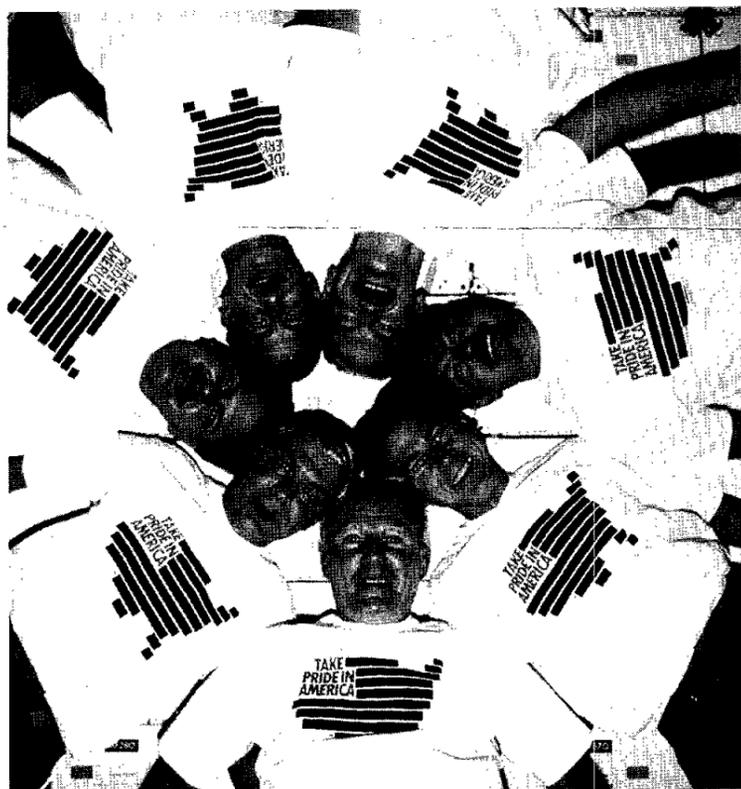
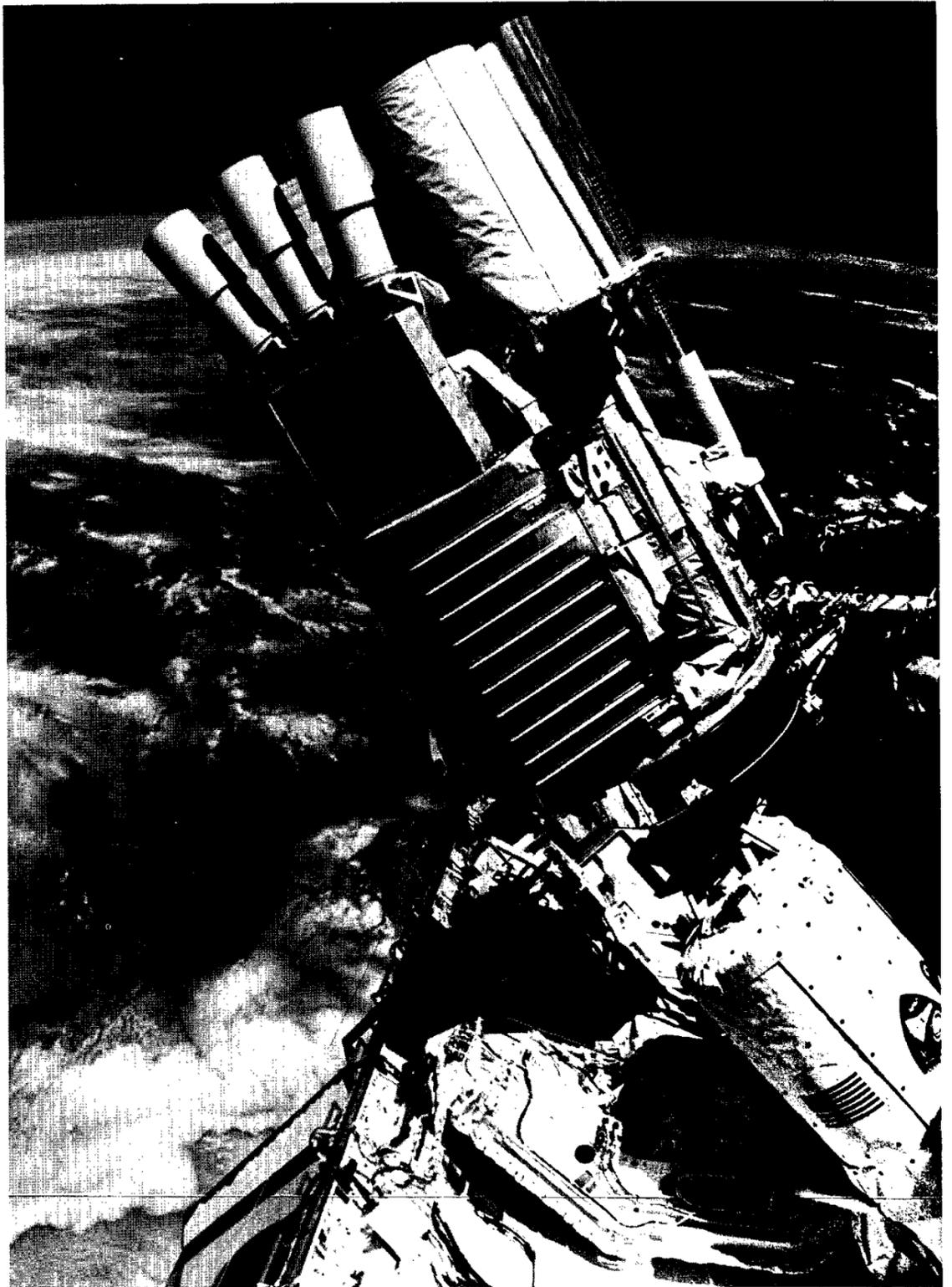
Center right: Mission specialists Jeff Hoffman, left; Mike Lounge, center; and Payload Specialist Sam Durrance observe the affect microgravity has on liquid.

Lower right: When not performing other duties, Payload Specialist Ron Parise operated the Shuttle Amateur Radio Experiment, speaking to ham radio operators around the globe.

Lower left, Durrance and Hoffman — who can now lay claim to being the first American to wear a tie in space — speak to students about the electro-magnetic spectrum during Space Classroom. "Assignment: The Stars" was the first school lesson taught from space.

Center left: Lounge makes notations on the Astro observations at the aft flight deck.

Upper left: The STS-35 crewmembers were, clockwise from bottom, Commander Vance Brand, Mission Specialist Bob Parker, Parise, Hoffman, Pilot Guy Gardner, Lounge and Durrance.



NASA expertise assists orthopedics

NASA's expertise in structural mechanics, design optimization and computer codes is finding applications in medical orthopedic science.

NASA Lewis Research Center scientists and Case Western Reserve University medical specialists and scientists are working together in Cleveland to increase the life of surgically replaced human joints by providing the capability to custom design prosthetic joint implants.

The objective of the program is to develop a computer code to design orthopedic implants to provide a custom fit of the prosthetic joint for each patient. This ensures a prosthetic joint life span of some 20 years and a corresponding minimum of discomfort to the patient. Using today's orthopedic procedures, a prosthetic joint may provide a serviceable life of as little as four years, with an average

life of about seven years.

Today's orthopedic joint replacement practice is to fit the patient to the prosthesis rather than, ideally, fitting the prosthesis to the patient. Thus, the bone immediately surrounding the prosthesis often deteriorates from uneven loading and causes the prosthesis to loosen which results in the need to replace the prosthesis.

Using computer programs developed for aerospace technology and modified for prosthesis design, the prosthesis will be designed for each individual. With an optimally designed fit, the patient's weight and joint movements would be more evenly distributed on the supporting bone, eliminating bone deterioration and prosthesis loosening.

NASA's Lewis Research Center is providing expertise in computational

mechanics and has developed a pilot computer code through the adaptation of modules from presently existing Lewis computer codes.

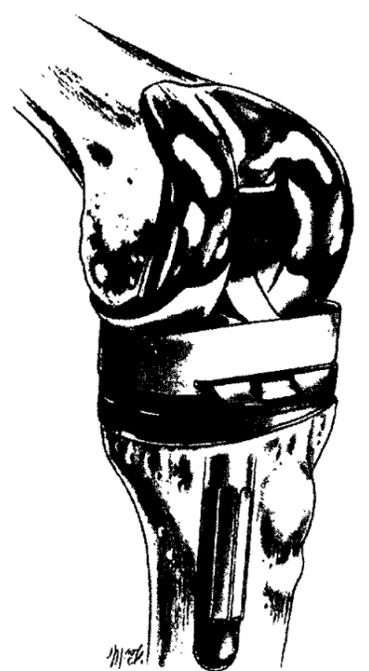
The university is providing the expertise in the area of orthopedic biomechanics. Pertinent areas under study include implant material and bone/tissue compatibility; correct implant placement and alignment; joint configuration and implant mating surfaces; joint mobility; joint durability; preservation of bone in and near the implant regions; and minimization of discomfort and cost to the patient.

"Our approach focuses on assembling many structural analyses and design modules along with defining the problem parameters to produce a computer code for optimizing prosthetic knee joints," said Dr. Christos Chamis, senior aerospace scientist in the Lewis Research

Center's Structures Division. "After the study for knee joints is complete, we will begin studies for other prosthetic body joints."

By Congressional mandate, NASA is charged with stimulating the widest possible use of the large storehouse of technology built over more than a quarter century of space exploration and six decades of aeronautical research.

Through its Technology Utilization Program, NASA seeks to encourage greater use of the knowledge bank by providing a link between the technology and those that might put it to an advantageous secondary use. The aim is to accelerate and broaden the technology transfer process and to gain national benefit in terms of new products, new processes, new jobs and a bonus return on the funds invested in aerospace research.



Observance marks King's movement

More than 150 people gathered at Gilruth Center last Friday to honor the memory of Martin Luther King Jr. and to discuss lessons learned from the movement started by slain civil rights leader.

This was the sixth year the JSC Black Cultural Association sponsored the program.

Cleo Glenn-Johnson, president and chief executive officer of the Black United Fund of Houston, and Lorenza Jelani Williams, president of TA-SETI, an organization that focuses on African-American studies, participated in a panel discussion about "Lessons Learned: The

Impact of the Civil Rights Movement in the 21st Century."

Several other community leaders were scheduled to appear, but flooding in the Houston area prevented their attendance. Organizers said the absent panelists will be asked to attend next year's observance for a continuation of the discussion.

Also during the festivities, Glenn-Johnson presented the Ron McNair Scholarship Award to Jacquelyn Johnson, a mathematics major at the University of Houston. The \$500 award is sponsored by the JSC Black Cultural Association.

Crew ready for mission

(Continued from Page 4)

changing what we're doing," said Coats. He added that STS-39 crew members are interested in the area and will pass over it two or three times during the flight.

"We're going to see what we can see up there, but I can tell you, based on my experience, we won't be able to see a whole lot," Coats said.

The men and women fighting in the area, however, will be in their thoughts, he added.

STS-39 is dedicated to research for the Pentagon's Strategic Defense Initiative program, a high-technology effort to detect and stop missile attacks with space- and ground-based hardware.

Discovery will carry three payloads with experiments to monitor atmospheric phenomena. To accommodate the mission objectives, crew members have been divided into a blue team and a red team allowing 24 hours of operations each day.

Hammond, a red team member, will share piloting duties with Don McMonagle who will be the blue team's pilot.

Hieb will grapple the SPAS and return it to Discovery's payload bay. Hieb, a NASA engineer before becoming an astronaut, has an extensive background in on-orbit procedures

development, particularly in rendezvous and proximity operations.

After the crew retrieves the SPAS, the pallet will remain on the RMS arm, and Greg Harbaugh will monitor this operation.

"We're using virtually every capability the RMS has operationally," Harbaugh said, one of four trained RMS operators on the flight.

Charles "Lacy" Veach will work with one of the mission's two prime payloads, the Air Force Program 675, a DOD payload. Its objective is to gather data on the Earth's atmosphere, celestial sources, and the environment in and around the shuttle cargo bay.

Guion Bluford is responsible for four secondary payloads: Space Test Payload 1; the Multipurpose Experiment Canister deploy; Clouds 1A; and Radiation Monitor Equipment III. STP-1 is comprised of experiments designed to collect ultraviolet, infrared, zero gravity and data management information. MPEC is a classified deployable experiment. The objective of the Clouds 1A experiment is to photograph cloud sequences over various ground sites. The RME III is a middeck instrument.

"As a crew we are anxious to fly and looking forward to having a good mission in February," Bluford said.

Exercise tries mishap plan

(Continued from Page 1)

to deploy the inflatable slides.

Rescue efforts also were hampered by nine large test articles secured to the floor throughout the cabin.

Luckily for the crew and passengers of NASA 930, this flight was a test, only a test.

The test, which occurred Jan. 17 at Ellington Field, was an exercise of the collective emergency response preparedness of JSC safety, security and medical personnel, and the Ellington fire, crash and rescue teams.

"The main purpose of the JSC mishap simulation is to bring all the essential personnel together to gain a better understanding of each person's role in the event of an actual mishap and to be familiar with JSC mishap plans, policies and procedures," said Dr. Phil Stepaniak, who, along with John Starnes of the Aviation Safety Office, coordinated the event.

The sim occurred on a sunny day after a successful KC-135 test flight.

After the plane moved safely into position on the runway at Ellington, firefighters roared onto the scene while passengers departed the plane via the inflatable slide. Those passengers designated as "injured" waited on board while rescue workers evacuated them by securing them to back boards that had to be lowered by rope down the slides.

Meanwhile, security and safety personnel set up boundaries and monitored those entering the mishap scene.

Ambulances from Friendswood and Southeast Houston reported to the scene to take the "injured" to area hospitals.

Overall, participants were pleased that only some minor communications issues needed to be addressed after the exercise.

"It went very well," said Stepaniak. "These simulations are designed to exercise the mishap plan so that participants can become more familiar in practicing their various responsibilities." NASA-JSC



JSC Photo

ENTERPRISING VISITOR—James Doohan, "Scotty" of the original "Star Trek" series, goes where all shuttle commanders have gone before during a recent tour of JSC. Doohan, escorted by Astronaut Mario Runco, checks out the view from the commander's seat of the full fuselage trainer in Bldg. 9A. Doohan also visited the Space Station Freedom mock-up, the Mission Control Center and the Weightless Environment Training Facility, and tried his hand at operating the remote arm in the Manipulator Development Facility.

Information center offers workshops

The JSC Scientific and Technical Information Center, located in Bldg. 45, will offer two workshops in February to assist users in locating scientific and technical information, and in learning about the development of information retrieval systems.

The first workshop is the "Keywording and Information Retrieval Workshop" offered from 12:30-4:30 p.m. Feb. 5 in Bldg. 45, room 304. This session is designed for database users who must develop subject terms and other retrieval

parameters for locally used and developed databases. The topics will include the development of Keyword vocabularies, use of the NASA thesaurus, and consistency of data descriptors for later retrieval.

The "Scientific and Technical Information Sources Workshop" will be offered from 1-4 p.m. Feb. 7 in Bldg. 45, room 304. This workshop is designed to aid researchers, scientists, and engineers in locating pertinent sources of information in their discipline or field of study. Topics will include NASA/JSC infor-

mation sources, on-line information retrieval systems, retrieval of data on government research, patent information, and tracking emerging technologies.

The center's resources are available to all JSC employees. Its resources include numerous sources of technical, scientific, and management information to support JSC programs and projects.

Call Donna McAllister of the STI Center, x36144, for reservations or additional information on these workshops.

New program enhances educational resources

JSC and contractor technical specialists are invited to a new educational program for area teachers titled "Generating Enthusiasm for Math and Science" Saturday at the Gilruth Center.

Sponsored by the JSC Federal Women's Program and the Clear Lake branch of the American Association

of University Women, GEMS is aimed at providing teachers with new ideas and resources for encouraging students in math and science.

The workshop, which will be from 8:30 a.m. to 4 p.m., will include demonstrations of hands-on activities teachers may take back to their classrooms and information on

resources for teachers.

Anyone interested in attending or being placed on the list of specialists to work with schools should contact a member of the program committee: Marilyn Lindstrom, x35135; Freda Marks, x30606; Nadine Barlow, x35044; or Denise Kelley, 335-8566.

STS-39 processing continues smoothly at KSC

(Continued from Page 4)

Hanging in a vertical position in the VPF as they will be on the launch pad, end-to-end tests, final thorough checks of all connections and instruments, were successfully completed this week on the IBSS/SPAS-II and the STP. All of the payloads will be moved from the VPF to Launch Pad 39-A on Friday to await Discovery.

Preparations of Atlantis for STS-37 also are going well in KSC's OPF Bay 2. Atlantis, being readied for an early April launch on mission STS-37 to deploy the Gamma Ray Observatory, will have its nose cap installed this week. Also, a flight readiness test of the main engines is scheduled this weekend.

GRO is now in KSC's Payload

Hazardous Servicing Facility, where operations were finished this week to load the spacecraft with the 4,200 pounds of fuel during its scientific work in orbit. Also, six flight-ready nickel-cadmium batteries were charged and installed in GRO. GRO will be moved from its current location to the VPF for further preparatory work on Feb. 6.